

Sub Cl

Component 1): mixture comprising:

1.a) Partially fluorinated prepolymers, having free NCO groups, obtained by reaction of (per) fluoropolyethers (PFPEs) diols having number average molecular weight Mn in the range 800-1,500, with a cyclic trimer of the isophorondiisocyanate (IPDI), in said reaction the ratio in equivalents between the OH/NCO groups being in the range 0.20-0.25,

1.b) biuret of hexamethylendiisocyanate (HDI) having an absolute viscosity at 20°C lower than 5,000 mPa.s,

in component 1) the ratio between the compound 1.b) and the compound 1.a) being in the range 10-90 parts of compound 1.b)/100 parts of compound 1.a);

Component 2): (per) fluoropolyether (PFPE) diol having Mn in the range 350-700, the amount of PFPE diol component 2) being such that the ratio in equivalents between the OH and NCO groups in the composition is in the range 0.9-1.1;

component 3): inert organic solvent under crosslinking temperatures, being the remaining part to 100% by weight of the composition.

Sub Cl 2

(Amended) Composition according to claim 1, wherein the component 1.a) is obtained by hot dissolving, the trimer of IPDI and the (per) fluoropolyether diol in inert organic solvent under crosslinking temperatures and maintaining the

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stoichiometric ratio in equivalents OH/NCO within the range 0.20-0.25 and a dry content in the range 65%-85% by weight, by adding the polymerization catalyst and hot maintaining the reaction until reaching the theoretic NCO content.

- B (B) m/c*
3. (Twice Amended) Composition according to claim 1, wherein as component 2, (2a) mixtures of PFPE oligomer diols having Mn in the range 800-1,500, with PFPE oligomer diols having Mn in the range 350-700 are used, in said mixtures of oligomers the weight ratio between the high and low molecular weight oligomers, respectively, being in the range 1/2-1/10, or the number average molecular weight of the mixtures of PFPE diol oligomers being lower than or equal to 700.

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6. (Twice Amended) Composition according to claim 1, wherein the (per) fluoropolyether diol compounds comprise one or more of the following (per) fluoroxyalkylene units
- (C_3F_6O) - , - $(CFYO)$ - , - (C_2F_4O) - , - $CR_4R_5CF_2CF_2O$ - , - $(CF_2)_aO$ - , wherein Y is F or CF_3 , R_4 and R_5 are equal to or different from each other and selected from H or Cl, a' is an integer equal to 3 or 4.

- B5 Cmt*
7. (Amended) Composition according to claim 6, wherein the PFPE diols are selected from the following, wherein the (per) fluoropolyoxyalkylene units are statistically distributed along the chain:

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- al) $-(C_3F_6O)m'(CFYO)n'$ - or $-(C_3F_6O)m'$ wherein the (C_3F_6O) and $(CFYO)$ units are perfluoroxyalkylene units statistically distributed along the chain; m' and n' are integers such as to give the above mentioned molecular weights, and m'/n' are comprised between 5 and 40, n' being different from 0; Y is F or CF_3 ;
 - bl) $-(C_2F_4O)p'(CYFO)q'$ - $(C_3F_6O)t'$ - or $-(C_2F_4O)p'(CYFO)q'$ - wherein p' and q' are integers such that p'/q' ranges between 5 and 0.3 and such that the molecular weight is within the above mentioned range; t' is an integer with the meaning of m' , Y = F or CF_3 ; $q'/(q'+p'+t')$ or $q'/(q'+p')$ is equal to 1/10 or lower and the t'/p' ratio ranges from 0.2 to 6;
 - cl) $-CR_4R_5CF_2CF_2O-$ wherein R_4 and R_5 are equal to or different from each other and selected from H or Cl, the molecular weight within the above mentioned range, a fluorine atom of the perfluoromethylene unit is optionally substituted with H or Cl, or perfluoroalkyl group, having from 1 to 4 carbon atoms;
 - dl) $-(CF_2)_aO-$ wherein a' is an integer equal to 3 or 4.

8. (Twice Amended) Composition according to claim 6, wherein two end groups, equal to or different from each other, of the bifunctional (per) fluoropolyethers are



wherein x_0 is an integer from 0 to 4, said end group being linked to the (per) fluoroxyalkylene unit by an oxygen atom but not by peroxidic sequences $-O-O-$.

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9. (Twice Amended) Compositions according to claim 1 which are formulated both as monocomponent or as bicomponent.

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11. (Twice Amended) Compositions according to claim 1, containing additives such as pigments and fillers, thixotropic agents, polymer dispersing agents selected from acrylic, silicone, polyurethane, polyamine, or having a carboxylic or non ionic functionality; stretching, anticissing, antifoam additives, additives to reduce photooxidation including UV adsorber and hindered amines (HALS).

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13. (Amended) Composition according to claim 12, wherein the catalyst is selected from the groups consisting of a) metal or amine catalysts, including triethylendiamine, N-ethyl-ethylendiamine, tetramethylguanidine, dimethyl cyclohexylamine, diazobicyclo octane; b) organometal catalysts selected from dibutyltindilaurate, tin octanoate, cobalt naphthenate, vanadium acetylacetone, dimethyltin-diethylhexanoate, dibutyltin diacetate, dibutyltin dichloride, and mixtures thereof; the catalyst being added in concentrations ranging from 0.1 to 2% by weight.

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14. (Twice Amended) Coating obtained by the compositions of claim 12.